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RESEARCH ARTICLE

REVIEW OF BEHAVIORAL BIASES - AN INDIVIDUAL EQUITY INVESTOR PERSPECTIVE.

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Abstract

Research has proved that investors in the equity market are not consistently rational. Emotions influence their decision making process in the complex environment of equity market, in the form of behavioral biases. This paper reviews five important behavioral biases exhibited by investors in the equity market. The behavioral biases reviewed include, representativeness, anchoring, gambler's fallacy, availability and optimism. The literature available for each of the biases is reviewed and hence this paper draws attention to a new dimension in finance.

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Introduction:-

The investors have been assumed to be rational in most classical financial theories like, capital asset pricing model (Sharpe, 1964), portfolio theory (Markowitz, 1952), efficient market hypothesis (Fama, 1965a, 1965b, 1970). A rational investor is one who always makes normatively acceptable decisions and amends his beliefs on a continuous basis based on the incoming information (Thaler, 2005). The efficient market theory assumed that investors were rational and were able to process all the available information (Shiller, 1999). Several behavioral economists had questioned this rationality assumption given the limited resources of time, money and processing capability of the human mind. According to them, the irrationality of the investors was reflected as random patterns in the stock prices in the stock market. In the decision of equity investment, emotions played an important role as information was abundant and uncertainties were high. With the market anomalies lining up due to the irrational behavior of the investors, academics were directed to look into psychology to explain the investor behavior (Phung, 2010).

A good understanding of the investors' behavior would help financial planners manage the investor's portfolio (Gupta, 1991). By understanding the psychology of the investors and overcoming their influences, profitable investments could be made (Iyer & Bhaskar, 2002). Harlow and Brown (1990) observed a biological connection unique to every investor which explained their investment behavior. Therefore, the investor's individualistic features played an important role in decision making.

The 1970s marked the first empirical studies on individual investor behavior. Lease, Lewellen and Schlarbaum (1974) were the first to empirically examine the transaction data of individual investors in order to determine the transaction pattern of the investors, their decision methodology, the demographics and their portfolio composition. The impact of demographics on the process of portfolio composition was examined by the Wharton survey (Blume & Friend, 1978). Daniel et al. (2002) cited the following as common investor behavior: (i) investors traded only in particular stocks owing to familiarity reasons. They could be stocks of their own country (Coval & Moskowitz, 1999; Kang, 1997; Lewis, 1999) or own company where they were employed; (Benartzi, 2001; Huberman, 2001).

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(ii) individual investors exhibited the behavior of loss aversion; (Tversky & Kahneman, 1991) (iii) investors extrapolated past performance of the stock into the future which was mostly found in selection of mutual funds; (Carhart, 1997; Grinblatt et al., 1995; Sirri & Tufano, 1998) (iv) investors traded excessively due to their overconfidence; (Barber & Odean, 2000 ; De Bondt & Thaler, 1994) (v) investors made prominent errors like status quo bias; (Kempf & Ruenzi, 2006), errors while exercising options (Longstaff et al., 2001) and under diversification; (Benartzi & Thaler, 2001) (vi) it was unlikely that investors always form efficient portfolios; (vii) investors tended to follow the crowd, a concept called herding (Chang et al., 2000; Hirshleifer & Teoh, 2003) and (viii) investors were affected by the trading highs and lows of stocks. The stock market information was depicted differently by various investors, and hence the classical financial models which assumed that the capital market reflected all the available information failed (Agrawal, 2012). Individuals also did not follow the expected utility theory when taking decisions under high volatility (Kahneman & Tversky, 1979; Machina, 1982). Therefore, the investors ended up having under diversified portfolios (Benartzi & Thaler, 2001), overconfidence (Odean, 1999) and loss aversion (Odean, 1998b). Kahneman (1973) also pointed out that individuals had a limited attention capacity, working memory and limited computational capabilities. Hence, in an ever-changing financial world filled with abundant information, decision making for the average investor became a big challenge.

Introduction to Behavioral Finance:-

“Behavioral Finance attempts to explain and increase understanding of the reasoning patterns of investors, including the emotional processes involved and the degree to which they influence the decision-making process. Essentially, Behavioral Finance attempts to explain the what, why, and how of finance and investing, from a human perspective” (Ricciardi & Simon, 2000, p.27). Hence, Behavioral Finance complemented the traditional financial theories by giving behavioral explanations for the irrational behavior of the investors and thereby increasing the spectrum of financial understanding. Olsen (1998) explained Behavioral Finance as a new paradigm which filled the gap of lack of behavioral factors in standard finance. Behavioral Finance attempted to explain the market significance of the psychological market decisions and also improved financial decision making by the application of economic and psychological principles. Behavioral Finance rested on two main blocks namely: limits to arbitrage and psychology (Barberis & Thaler, 2003). Arbitrage opportunities created by irrational noise traders may be difficult to correct by rational counterparts due to various constraints like cost, risk, etc. Therefore, there existed boundaries to arbitrage. Behavioral economists used psychology to comprehend how investors were prone to biases which was because of the beliefs and preferences of investors (Barberis & Thaler, 2003). Statman (1999) however had a different dimension, “Some people think that Behavioral Finance introduced psychology into finance, but psychology was never out of finance. Although models of behavior differ, all behavior is based on psychology” (Statman, 1999, p.19).

Emotions influence the decision making process in the form of behavioral biases. Behavioral biases namely representativeness, anchoring, gambler’s fallacy, availability and optimism are discussed in this paper.

Representativeness:-

“According to representativeness, the subjective probability of an event, or a sample, is determined by the degree to which it: (i) is similar in essential characteristics to its parent population; and (ii) reflects the salient features of the process by which it is generated” (Kahneman & Tversky, 1972, p.430). This implied that when faced with uncertain events people employed subjective probability to decide the more representative event as more likely to happen. Depending on the amount of correspondence between the sample and the population, the subjective probability was evaluated. A specific sample would be considered more representative of the population depending on how similar it was to the population. The representative sample needs to maintain the majority-minority relationship as it was in the population. The sample size was often neglected when selecting the representative sample and priority was given only to the significance of the result. In addition to being similar to the population, the representative sample also needed to appear random. Randomness implied the absence of distinct patterns. In a representative sample, the characteristics of the population needed to be reflected not only throughout the sample, but also in every local part. Hence the representativeness heuristic was employed when the events were portrayed in terms of their general properties (Kahneman & Tversky, 1972).

Kahneman and Tversky (1973) explained that while employing representativeness heuristic, people had the propensity to predict the outcome based on how representative it was of the evidence, thereby ignoring the prior probabilities of the outcome and the reliability of the evidence. People tended to predict even extreme values and rare events if these were representatives. They showed using both numerical predictions and categorical predictions

that these predictions ignored both prior probability of the outcome and the reliability of the evidence. With respect to numerical predictions, the consistency of the inputs was an important determinant of representativeness. This in turn boosted the confidence with which the predictions were made but in the process reduced the validity. This led to a phenomenon called illusion of validity where highly confident predictions were made in fallible situations. Representativeness bias generated a bias called the base rate neglect which implied too much attention given to the description of the statement and less attention to the statement. Representativeness led to another bias, called the sample size neglect where, unaware of the data-generating process, people had the propensity to infer too quickly from very few data points, thereby neglecting the sample size (Barberis & Thaler, 2003).

Barberis, Shleifer and Vishny (1998) developed a parsimonious model of investor sentiment using the representativeness bias as the psychological idea to explain the overreaction of investors. In this model, the investor used the regime switching model to forecast future earnings. In the regime switching model, there were only two states, Mean-Reverting and Trending. The investor in the trending state was subject to the representativeness bias. In their words representativeness is defined as, “the tendency of experimental subjects to view events as typical or representative of some specific class and to ignore the laws of probability in the process” (p.308). The most prominent exhibition of the representativeness bias was that the investors felt that they saw patterns in truly random sequences thereby leading to overreaction. Overreacting to consecutive high earnings led to higher valuation of firms and hence inflated stock prices.

This representative heuristic made investors take quick decisions at the cost of judging resemblances which were merely superficial. This heuristic led to unwanted importance given to the similarities between the events thereby ignoring the variables critical for determining the probability of the event (Jayaraj, 2013).

Anchoring:-

The phenomenon in which different starting points led to different estimates, which were all biased towards their respective initial values, was anchoring. The adjustments from the initial value were however insufficient and led to underestimation. The initial values were either given explicitly or were determined based on an incomplete computation. The effects of anchoring were underestimation of the probability of disjunctive events which had a funnel-like structure and overestimation of the probability of conjunctive events which had a chain-like structure. The other effect owing to insufficient adjustment was anchoring in the assessment of subjective probability distribution which led to narrowly defined confidence intervals (Tversky & Kahneman, 1974). “Anchoring heuristics refers to individuals’ tendency to base estimates and decisions on known ‘anchors’ or familiar positions, with an adjustment relative to this starting point” (Chandra and Kumar, 2011, p.15). Adjustments from the anchor differed based on the source of the anchor (Epley & Gilovich, 2001). Block and Harper (1991) illustrated the anchoring effect. They showed that when individuals were asked to generate and explicitly show their own anchors, their overconfidence reduced. On the other hand, when the anchors were provided externally, the overconfidence increased. Hence when anchors had to be self-generated and exposed, the limitation of one’s estimation ability was revealed. The stock market was a highly ambiguous market and with the absence of good information about the prices, the past prices naturally become anchors to determine today’s price. Hence anchoring on past prices helped to determine the current price. The concept of anchoring helped to explain international anomalies in the stock market as well. The high P/E ratio in the Tokyo market was because of the readily available anchor, the US P/E ratio which was comparatively lower (Shiller, 1999). Models which successfully explain price dynamics were those in which the valuations of the agents depended on the proximity of the share price to an “anchor”. George and Hwang (2004) strategized that the 52-week high served as an anchor to estimate the future returns, by determining, how close the current price was to the anchor. The anchor, 52-week high, had predictive power to determine whether the stocks had had extreme past returns. Hence, the price level was important and was consistent with the anchor-and-adjust bias. The potential impact of any news on the share price was evaluated based on this anchor.

Cen et al. (2013) tested the proposition that the market participants (which consist of investors and sell-side analysts) were influenced by the anchoring bias in the process of estimating the future profitability of the firm. They showed empirically that the analysts made optimistic earnings forecasts for firms with the forecasted EPS lower than the industry mean. On the other hand, the analysts made pessimistic earnings forecasts for firms with the forecasted EPS higher than the industry mean. Hence in both the cases the industry mean served as the anchor to predict the earnings forecasts. In the future, the returns of the firms with low forecasted EPS were lower than the firms with high forecasted EPS. The biased forecast of the analysts in turn affected the investors’ judgment and they had biased expectations of the firm’s profitability. Investors with anchoring bias tended to predict market forecasts very close to

current market levels and even when there was new information coming in about the company, whose stock they were holding they tended not to change their original estimates. Forecasts for the next year will also be anchored to the current rise or fall in the returns. The economic states of certain countries or companies would also be held as anchors by some investors (Pompian, 2006). Investors were better off at relative thinking than absolute thinking. Investors tend to base their hold/sell decisions based on illogical reference points which served as anchors for further adjustments. Investors will resist redistribution of stocks in the portfolio if the price was below the purchase price which served as an anchor (Pompian, 2008). Hence financial advisors needed to know that risk of loss was an essential trait of risk and loss was a relative term and varied with every investor (Kahneman & Riepe, 1998).

Gambler's fallacy:-

Tversky and Kahneman (1971) explained gambler's fallacy as the "misconception of the fairness of the laws of chance" (p.106). They explained that every part of a random sequence was expected to have all the properties of randomness. Hence if there was a deviation in one direction, a correction in the opposite direction was expected in order to balance the randomness. Representativeness, believing that small samples should also be representative of the underlying process, (Kahneman & Tversky, 1972) was the source of gambler's fallacy (Johnson & Tellis, 2005). Kudryavtsev et al. (2013) defined gambler's fallacy as "an (incorrect) belief in the negative autocorrelation of a non-autocorrelated random sequence" (p.35). That is, in a sequence where every event was independent, the fallacy of expecting a negative deviation was gambler's fallacy. The example was the roulette wheel, where after the occurrence of three red numbers, a black number was expected by the individual affected by gambler's fallacy. Gambler's fallacy was "the assumption of dependence in a sequence of independent events" (Johnson & Tellis, 2005, p.489). This fallacy was known as Gambler's fallacy, because the gamblers in general played even at the face of losses, expecting success after a series of losses.

Johnson and Tellis (2005) explained that the heuristic, usage of past sequential information about the asset's performance to make suboptimal decisions, led to gambler's fallacy. When faced with a sequence of events, investors expected a trend projection or trend reversal (gambler's fallacy) depending on the length of the trend (Johnson et al., 2005). If the length of the trend was short (long), trend projection (reversal) was expected. Hence when stock's performance was valued, they were viewed as a sequence of outcomes and after a series of positive returns, once the stock was overvalued, gambler's fallacy set in and the trend reversed. They proposed that Gambler's fallacy explained why investors held on to losing stock in the disposition effect explained by Shefrin and Statman (1985). Investors expected a reversal in the losing stock, which was essentially a random event and hence hold on to it. The trends in the stock market were insignificant, and the current price (not the past price) was the best estimate of the future price. Kudryavtsev et al. (2013) studied the effect of gambler's fallacy among professional and non-professional investors in Israel. They found that all the respondents were moderately affected by this bias and this bias was also found to be highly correlated with other biases like disposition effect, herd behavior, availability heuristic and hot hand fallacy. This correlation was found to be higher for male investors and more experienced investors. Shua et al. (2006) proved the existence of gambler's fallacy with psychological experiments. They found that at any time when the stock price went up (down) consecutively, gambler's fallacy set in and the investor tended to think there was a higher probability of a reversal.

Availability:-

Daniel et al. (2002) defined the availability bias as "heavy focus on information that stands out or is often mentioned, at the expense of information that blends in with the background" (p.143). "The availability heuristic operated on the notion that, 'if you can think of it, it must be important.' The availability of consequences associated with an action was positively related to perceptions of the magnitude of the consequences of that action" Jayaraj (2013, p.25).

Tversky and Kahneman (1974) illustrated the biases which resulted from the availability heuristic. These biases included biases of imaginability, biases due to the retrievability of instances, illusory correlation and biases due to the effectiveness of a search set. The imaginability biases resulted when the instances were not present in the memory but need to be imagined, that is, generated as per a given rule. Kudryavtsev et al. (2013) explained that availability heuristic was applied when people estimated the probability of an event based on the ease with which it could be imagined. Those that were distinctly explained and easier to depict and understand could be easily imagined. The retrievability of instances referred to the easy withdrawal of familiar and recent occurrences from the memory. Investors tended to invest in firms which indulged in heavy advertising due to easy recall, despite the fact

that the really good firms hardly advertise (Pompian, 2008). Massa and Simonov (2005) studied the availability heuristic among Swedish investors, using familiarity as a proxy for the availability bias.

The illusory correlation resulted when associations between instances were formed due to frequent co-occurrences. The search set effectiveness was the ease with which the target population could be scanned to determine the required probability.

Kliger and Kudryavtsev (2010) explained the availability heuristic as the propensity to overweight latest information, as against processing all necessary information. They defined and tested two forms of the availability heuristic namely, outcome and risk availability. The daily market return was proxied for the outcome availability and they documented that there were stronger positive (negative) stock price reactions to the analysts' recommendation upgrades (downgrades) when accompanied by positive (negative) stock market index returns. With respect to risk availability, they documented that on occasions of significant market moves, the abnormal stock price reactions to analysts' downgrades were stronger and weaker for upgrades. Investors with the availability bias tended to select stocks of those companies which were easy to retrieve from memory like those which were advertised more often. Such investors were also biased in choosing their home countries to invest in as information about such companies was more vivid in memory. Availability bias restricted choices within the experience of the investor and also investors tended to select stocks of companies which matched their personality (Pompian, 2006).

Da Silva Rosa and Durand (2008) documented evidence in a dataset of 1412 portfolios for the investors' usage of the availability heuristic when considering the inclusion of a stock in the portfolio. The availability heuristic was measured by the proxy, the number of stories in the national press about a stock in the month before the formation of the portfolios. It was found that the more the stories about a stock, the more likely it was for the stock to be chosen. However, as the investors become more sophisticated, the tendency to use the availability heuristic to form portfolios declined. Barber and Odean (2008) also documented that investors tend to buy attention grabbing stocks like the stocks in the news, those with extreme trading volume or extreme returns. This tendency was because the stocks available for purchase were plenty and search costs were high, hence attention was employed to limit the choice set. Only when attention and utility were positively correlated the decision taken was fruitful. Klibanoff et al. (1998) documented that investors reacted more quickly to news events. "Frequent reporting of an entity in the media increases its availability in memory and thus increases its likelihood of coming to mind and being selected", (Cheng, 2010, p.97). Hence it was the attention which determines the choice set, in this case, the investor's stock portfolio. Kudryavtsev et al. (2013) studied the effect of availability heuristic among professional and non-professional investors in Israel. They found that all the respondents were moderately affected by this bias and this bias was also found to be highly correlated with other biases like disposition effect, herd behavior, gambler's fallacy and hot hand fallacy. This correlation was found to be higher for male investors and more experienced investors.

Cheng (2010) suggested that the use of the availability heuristic could be avoided by sleeping over the decision and letting the unconscious mind take over, so that the less accessible information would come to the mind. Because of the delayed time factor, the impact of ease of retrieval from the memory was mitigated.

Optimism:-

Weinstein (1980) coined the term "unrealistic optimism" and explained it as a flaw in judgment where there were expectations of peers to be more susceptible and preys of misfortune than oneself. He was among the first to study the optimism bias and found that in general, individuals believed that they were more likely to experience positive events than negative events. Fabre and François-Heude (2009) defined optimism as "the tendency or inclination to perceive an event or action as more likely to result in a favorable outcome, irrespective of the objective probability of that outcome actually occurring" (p.80). That is, optimism was only the expectation of a favorable output without paying attention to how the output will be achieved with the given quality of resources. Bracha and Brown (2012) explained that optimism played an important role when faced with risky situations and the information about the situation was also known, that is, endogenous ambiguity. An optimistic individual would view the ambiguity as advantageous and hence was being ambiguity-seeking whereas a pessimistic individual would view it as disadvantageous and hence was being ambiguity-averse.

Optimism bias in the equity market:-

"Optimism is associated with a feeling of personal control, and the stock market is indeed a place where confident people can attempt to exert their influence" (Ciccone, 2011, p.166). Dimson et al. (2004) explained irrational

optimism in the equity market as the attitude of the investors that the market would revive after a bubble to keep up with the inflation. Irrational optimism was also the propensity of the investors to overestimate the benefits and underestimate the uncertainties and risks involved while holding stocks in the long term. They showed that the actual returns yielded in the equity market were actually lower than the projected returns which investors expected as a result of irrational optimism. Moore et al. (1999) showed that the investors were overoptimistic in their judgments during a bull run when compared to the investors who traded during a bear market. Manglik (2006) explained that the optimism bias was an obvious characteristic of stock market players, as the optimism bias was generally vivid in uncertain environments and in comparative situations where there were judgments based on others. In the stock market, decision making took place under major uncertainty and one's result was based on the performance of the other players in the market who buy or sell. Also the optimism bias exhibited by portfolio managers or financial advisors could translate into biased behavior of the secondary investors as they transacted in the stock market based on their optimistic advice. Optimism bias in the stock market could also be brought in by the new generation investors who come in at a continuous rate and tend to be more optimistic than older generation investors. Hence the learning from over-optimistic decisions like over-estimations was not really passed on to the new entrants of the equity market. Stout (1995) explained that it was mainly the optimistic individuals who were positive about their stock selection capabilities who indulged in equity trading. As the share prices were mispriced, it took optimism and confidence to see through the imperfect information available; and test their stock-picking skills by buying the stocks perceived as underpriced; and selling the stocks perceived as overpriced. The optimism among the stock players also enabled them to hold strong viewpoints about the stock positions in the market and thereby induced more speculative trading. Speculative buying (selling) would artificially increase (decrease) the share prices owing to false demand. This in turn would lead to a distortion of prices in the stock market and hence high volatility in the market (Manglik, 2006; Stout, 1995). Diether et al. (2002) showed that the stock prices were a reflection of only the view of the optimistic players in the stock market when the investors who had lower valuations did not participate due to various reasons like short-sale cost constraints, incentive pattern of analysts, etc. They provided evidence to show that stocks with difference of opinion in the earnings' forecast among the analysts earn lower returns. This pattern was more evident among small stocks and stocks with a poor history of performance. Stout (2000) explained how the optimism bias played an important role in deciding when to purchase a stock at the desired price. When the stock prices were high only a few highly optimistic investors would buy the stock. When the stock prices were lower, the less optimistic players would now buy the stock. Hence, it was the "relatively optimistic marginal investor" (p.25) who decided the price of the share. Also he explained that the level of uncertainty in the market decided the level of optimism. With higher uncertainty, investor's opinions in the range pessimistic to optimistic changed to wildly pessimistic to wildly optimistic. In the price optimism models put forth by several researchers, the optimistic players who valued the stocks at higher prices held the stocks and also suffered losses in the long run owing to the unrealistic valuations. Hence, more was the difference of opinion about a stock's value; more would be the deviation from the true value of the stock. The pessimistic players did not participate in short selling because of the differences in opinion and the limits on short selling (Diether et al., 2002; Miller, 1977; Morris, 1996). Out of the fraction of the equity players who considered a stock, the most optimistic players would set the price of the stock (Miller, 1977). Scherbina (2001) proved empirically Miller's proposition that whenever there was disparity for stock valuation, the stock prices would finally reflect the view of the most optimistic players.

Optimism bias and Overconfidence:-

Fabre and François-Heude (2009) showed that in favorable situations, optimism increased with positive changes. They also explained that optimism and overconfidence were related positively. An investor who exhibited both the optimism bias and overconfidence bias tended to be highly sure that the results would be favorable owing to his/her own abilities and attitudes. An investor who was optimistic but not overconfident tended not to rely too much on his/her own assessment but had a positive attitude towards events. The optimism bias tended to increase the level of risk taken regardless of the exhibition of the overconfidence bias.

Optimism bias in the valuation of growth/value stocks:-

Jiang et al. (2005) showed that the growth stocks with high information uncertainty earned lower returns in the long run, though they had high price and earnings momentum initially owing to the optimism among the stock players. They defined information uncertainty in terms of the "precision with which firm value can be estimated by knowledgeable investors at reasonable cost" (p.185). The optimistic players valued the growth stocks with huge valuations and this optimism got into the prices hence the prices peaked. Over time the prices get corrected and hence the returns dropped. Doukas et al. (2002) tested the bias among the investors in their expectations of the performance of the value and growth stocks based on their past performance. They showed that the investors were

more optimistic about the value stocks than the growth stocks. La Porta (1996) on the other hand, showed that investors were optimistic about the earnings of the growth stocks and pessimistic about the earnings of the low growth value stocks.

Measures of Optimism bias:-

Puri and Robinson (2007) measured the optimism bias using self reported life expectancy as a proxy and found that optimistic individuals were more 'stock-pickers' than the pessimistic individuals. That is, they preferred individual stocks to mutual funds in their equity portfolios. Hence they showed that optimism played an important role in most economic decisions. They also found that the self-employed people were more optimistic when compared to the salaried individuals. The optimistic people were also found to be more hard working. Ciccone (2011) proposed the optimism bias as an explanation for the January effect and proved the optimism hypothesis that is the optimistic players in the stock market bid up the prices of the favorable stocks in the month of January owing to optimistic expectations. This domination of the optimistic players led to repeated spikes in the month of January. In the month of January another interesting pattern observed was the small firms which inherited higher uncertainty generated higher returns when compared to the larger firms. This is because the investors tended to be more optimistic about the smaller stocks. Marciukaityte et al. (2005) showed that optimism played an important role during private equity placements. When there were many successful firms in the market before the placements, the optimism among the investors was high and the placements were accepted favorably among the investors. The optimistic players viewed the placing firms to be similar to the already successful firms and hence overpriced them. The placing firms which had highly unpredictable growth opportunities were thus projected in league with the already successful firms. This extreme optimism resulted in abnormal increase of returns during the announcement period and under performance of the stocks post the placements. Yi et al. (2008) demonstrated the effects of optimism among the investors before the issue of equity shares and showed that it resulted in significant poor performance post the issue. A strong positive association was found between the investor optimism before the issue and the underperformance post the issue. The optimism sustained even for a period of twelve months post the issue and was also on the rise. Also the investors were more optimistic about the issuers of equity than debt.

Negative effects of Optimism bias:-

Manglik (2006) explained the negative effects of being overly optimistic in the stock market. The exposure to high risk increased owing to huge levels of trading by the optimistic stock investors. This high risk coupled with the transaction costs led to huge losses in the stock market. The mistakes owing to over-optimistic trading further increased with the presence of the intermediaries. As when the optimism in one's own stock picking abilities yielded losses, one might shift the optimism to picking fund managers or financial advisors (Stout, 1995). Jaimovich and Rebelo (2007) showed that optimistic investors expected a highly unrealistic rate of return from investments and as a result tend to overinvest.

Optimism bias in the Indian equity market:-

Bennet et al. (2012) tested the optimism bias among the Indian stock market investors towards the Indian equity market. They showed that the sample investors were optimistic that the Indian market would immediately revive after a drop of 3% and were also optimistic about the future as they projected the market to rise for the next twelve months. The investor optimism was also reflected in their judgment that there was no better investment option than the equity market. The investor optimism was unaffected by the limitations of cost and risk.

Managerial optimism:-

Heaton (2002) modeled the optimism bias in two ways with respect to the managerial optimism. In one side, the optimistic managers tended to reject positive NPV projects that needed to be externally financed fearing the undervaluation of its risky securities by the market. On the other side, they would have the propensity to invest in negative NPV projects as a result of overvaluation of their own projects. Hence the optimistic managers tended to overestimate the good performance of the firm and underestimate the poor performance of the firm. Strong and Xu (2003) showed that the fund managers of different countries like Japan, Europe, US and UK had the propensity to be relatively more optimistic about their native (home) equity market, thereby introducing the equity home bias. This in turn led to the formation of more portfolios with domestic equities than foreign equities.

Conclusion:-

This paper has brought to light the literature behind five important behavioral biases exhibited by investors in the equity market. Representativeness bias allowed investors to make quick decisions when the information coming in

had positive resemblances to the past. Anchoring bias enabled investors to make decisions in the stock market with reference to specific price levels which served as anchors. Gambler's fallacy allowed investors to believe in mean reversion and hence predict the rise/fall of a trend based on the length of the trend. Availability bias enabled the investors to rely on currently available information and include stocks in the media in the choice set while making purchase decisions. Optimism bias allowed investors to expect high returns in the equity market and look at only the positive side of events. Hence this paper reviewed the five important behavioral biases which have been ignored for a long time in finance.

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